

Remarks

Reconsideration of this Application is respectfully requested.

Claims 1, 7, 8, 14, 15, 19, 20, 26, and 29 are pending in the application, with claims 1, 8, 15, and 20 being the independent claims.

The claims presented in this Application should be interpreted solely based on the file history of this Application, not the file history of any predecessor or related application. With respect to this application, Applicant hereby rescinds any and all disclaimers of claim scope made in any parent application(s), any predecessor application(s), and any related application(s). The Examiner is advised that any previous disclaimer of claim scope, if any, and any references that allegedly caused any previous disclaimer of claim scope, may need to be revisited. Nor should any previous disclaimer of claim scope, if any, in this Application be read back into any predecessor or related application.

Based on the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 1, 7, 15, 19, 20, and 26

Claims 1, 7, 15, 19, 20, and 26 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over United States Patent Publication No. 2001/0012783 to Peeters et al. ("Peeters") in view of Patent Cooperation Treaty Publication No. PCT.DE2001/001622 to Bolinthe et al. ("Bolinthe") and United States Patent Publication No. 2003/0054852 to Ginesi et al. ("Ginesi"). Applicant respectfully traverses the rejection and provides the following arguments to support patentability.

Different parameters relating individual carriers are stored and used for modem operations. (Specification, p. 2, ll. 1-19.) Instead of storing each of the different parameters for each individual carrier, the invention as disclosed in this Application groups individual carriers into dynamically variable size carrier groups then defines carriergroup parameters relating to carrier groups rather than individual carriers. (Specification, p. 7, ll. 24-26.) For example, the modem of independent claim 1 groups the individual carriers into the dynamically variable size carrier groups and *"determine[s] a carriergroup [signal-to-noise ratio (SNR)] parameter for each of the plurality of dynamically variable size carrier groups, the carriergroup SNR parameter being a worst case SNR parameter from among the SNR parameters corresponding to the plurality of carriers within each of the plurality of dynamically variable size carrier groups."* The modem of independent claim 1 then *"determine[s] carriergroup bitloading and gain parameters for each of the plurality of dynamically variable size carrier groups based upon the worst case SNR parameter for each of the plurality of dynamically variable size carrier groups."*

The Office Action correctly acknowledges that Peeters and Bolinthe alone, or any combination thereof, do not teach or suggest at least the features of determining carriergroup *"gain parameters for each of the plurality of dynamically variable size carrier groups based upon the worst case SNR parameter for each of the plurality of dynamically variable size carrier groups"* as recited by independent claim 1. (Office Action, pp. 3-6.) To cure this deficiency, the Office Action alleges Ginesi teaches or suggests these missing features such a combination of Peeters, Bolinthe, and Ginesi renders independent claim 1 obvious. However, as to be discussed below, Ginesi does

not teach or suggest these missing features of independent claim 1; therefore, the combination of Peeters, Bolin, and Ginesi does not render claim 1 obvious.

Ginesi

Ginesi discloses computing fine gains at initialization after a per-bin signal to noise ratio (SNR) estimation phase, referred to as MEDLEY states. (Ginesi, ¶ [0007].) Specifically, once the estimated noise for each given channel, referred to as N_{SNR_i} by Ginesi, is determined, a fine table is computed by estimating the actual signal to signal noise ratio for each given channel, referred to as SNR_i^0 by Ginesi, during the MEDLEY states. (Ginesi, ¶ [0040].) A difference between the estimated noise and the actual signal to signal noise ratio for each given channel, referred to as ΔSNR by Ginesi, is defined. (Ginesi, ¶ [0040].) Ginesi next defines a maximum amount of SNR degradation that can be tolerated as a result of a power cut back SNR_{deg} which is then used to determine a gain factor A. (Ginesi, ¶¶ [0042] - [0043].) The gain factor A is determined by evaluating equation (12) of Ginesi, namely:

$$A = \sqrt{\frac{\frac{1}{\Delta\text{SNR}}}{\text{SNR}_{\text{deg}} - 1 + \frac{1}{\Delta\text{SNR}}}}$$

Ginesi then uses the gain factor A to determine a final fine gain table. (Ginesi, ¶ [0044].) Ginesi, therefore, determines the final fine gain table using the signal noise ratio for each given channel. Nowhere does Ginesi disclose grouping each given channel into "dynamically variable size carrier groups" nor using "the worst case SNR parameter" for each of the dynamically variable size carrier groups to determine ΔSNR or SNR_{deg} .

In contrast, the modem of independent claim 1 "determine[s] *carriergroup... gain parameters* for each of the plurality of dynamically variable size carrier groups *based upon the worst case SNR parameter* for each of the plurality of dynamically variable size carrier groups." The modem of independent claim 1 determines a carriergroup gain parameter for each dynamically variable size carrier group as a whole, not each individual carrier within each dynamically variable size carrier group as disclosed by Ginesi. Additionally, the modem of independent claim 1 determines the carriergroup gain parameter for each dynamically variable size carrier group using the worst case SNR parameter of that dynamically variable size carrier group. Nowhere does Ginesi disclose grouping each given channel into "*dynamically variable size carrier groups*" nor using "*the worst case SNR parameter*" of the dynamically variable size carrier group to determine a carriergroup gain parameter for that dynamically variable size carrier group.

Therefore, Ginesi does not teach or suggest at least the features of "*determin[ing] carriergroup... gain parameters for each of the plurality of dynamically variable size carrier groups based upon the worst case SNR parameter for each of the plurality of dynamically variable size carrier groups*" as recited by independent claim 1. Independent claims 15 and 20 each recite substantially similar features that are likewise not taught or suggested by Ginesi. Peeters and Bolinthe alone, or any combination thereof, do not provide the missing teachings or suggestions with respect to independent claims 1, 15, and 20 nor does the Office Action so allege; therefore, the combination of Peeters, Bolinthe, and Ginesi does not render these independent claims obvious. Dependent claims 7, 19, and 26 are likewise not rendered obvious by the combination of Peeters, Bolinthe, and Ginesi for the same reasons as the independent claims from which they respectively depend and further in view of their own respective features.

Accordingly, Applicant respectfully requests that the rejection of claims 1, 7, 15, 19, 20, and 26 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Claims 8, 14, and 29

Claims 8, 14, and 29 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Peeters in view of Bolinith and Ginesi, and in further view of United States Patent No. 6,961,369 to Tzannes ("Tzannes"). Applicant respectfully traverses the rejection and provides the following arguments to support patentability.

As discussed above, the combination of Peeters, Bolinith, and Ginesi does not teach each and every feature of independent claims 1, 15, and 20. Independent claim 8 recites substantially similar features as independent claims 1, 15, and 20. For example, independent claim 8 recites at least the feature of "*determining... carriergroup... gain parameters based upon the carriergroup SNR parameter for the dynamically variable size carrier group.*" For the reasons discussed above in regard to independent claims 1, 15, and 20, the combination of Peeters, Bolinith, and Ginesi does not teach or suggest these substantially similar features that are recited by independent claim 8. Tzannes does not provide the missing teachings or suggestions with respect to independent claim 8 nor does the Office Action so allege; therefore, the combination of Peeters, Bolinith, Ginesi, and Tzannes does not render independent claim 8 obvious. Dependent claims 14 and 29 are likewise not rendered obvious by the combination of Peeters, Bolinith, Ginesi, and Tzannes for the same reasons as independent claim 8 from which they respectively depend and further in view of their own respective features. Accordingly, Applicant respectfully requests that the rejection of claims 8, 14, and 29 under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,

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Date: 03/30/2011

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